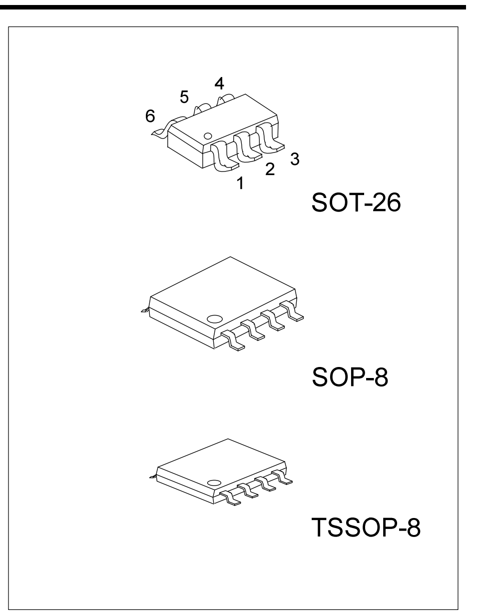


UNISONIC TECHNOLOGIES CO., LTD

UT8205A

Power MOSFET

N-CHANNEL ENHANCEMENT MODE



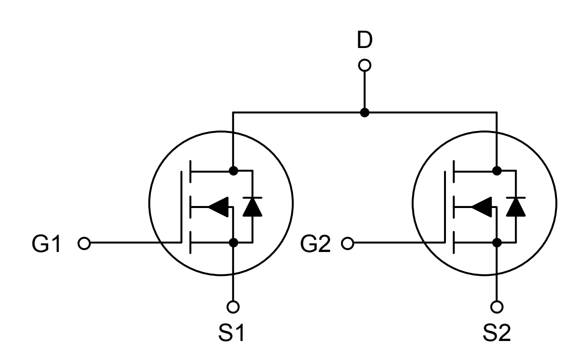
■ DESCRIPTION

The **UT8205A** uses advanced technology to provide fast switching, low on-resistance and cost-effectiveness. This device is suitable for all commercial-industrial surface mount applications.

■ FEATURES

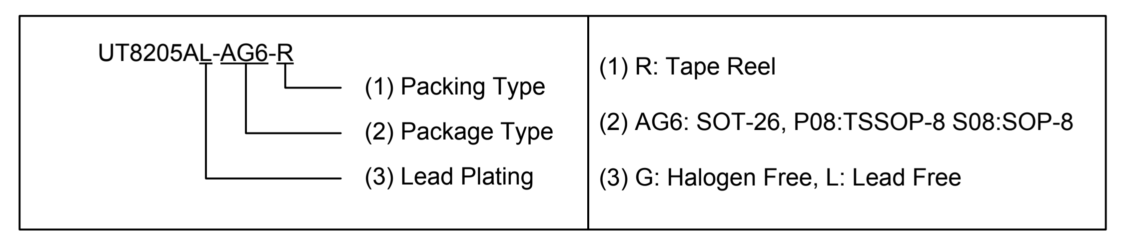
* $R_{DS(ON)}$ ≤28mΩ @V_{GS} = 4.5 V
* Ultra low gate charge (typical 23 nC)
* Low reverse transfer Capacitance (C_{RSS} = typical 150 pF)
* Fast switching capability
* Avalanche energy Specified
* Improved dv/dt capability, high ruggedness

■ SYMBOL

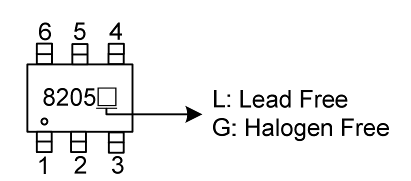


■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen-Free		1	2	3	4	5	6	7	8	
UT8205AL-AG6-R	UT8205AG-AG6-R	SOT-26	S1	D	S2	G2	D	G1	-	-	Tape Reel
UT8205AL-S08-R	UT8205AG-S08-R	SOP-8	D	S1	S1	G1	G2	S2	S2	D2	Tape Reel
UT8205AL-P08-R	UT8205AG-P08-R	TSSOP-8	D	S1	S1	G1	G2	S2	S2	D2	Tape Reel



■ MARKING FOR SOT-26



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	20	V
Gate-Source Voltage		V_{GSS}	±12	V
Drain Current (Note 2)	Continuous	I_D	6	A
	Pulsed	I_{DM}	20	A
Power Dissipation (Ta=25°C) (Note 3)	SOT-26	P_D	1.14	W
	SOP-8/TSSOP-8		1	W
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55 ~ +150	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.
2. Pulse Test : Pulse width≤300μs, Duty cycle≤2%
3. Pulse width limited by $T_{J(MAX)}$

■ THERMAL DATA

PARAMETER		SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient (Note)	SOT-26	θ_{JA}			110	°C/W
	SOP-8				78	°C/W
	TSSOP-8				125	°C/W

Note: Pulse Test : Pulse width≤300μs, Duty cycle≤2%

■ ELECTRICAL CHARACTERISTICS (T_J =25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=250μA	20			V
Breakdown Voltage Temperature Coefficient	$\frac{\Delta BV_{DSS}}{\Delta T_J}$	I_D=1mA, Reference to 25°C		0.03		V/°C
Drain-Source Leakage Current	I_{DSS}	V_{DS}=20V, V_{GS}=0V,			1	μA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±8V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS}, I_D=250μA	0.5		1.5	V
Drain-Source On-State Resistance (Note)	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=6.0A			28	mΩ
		V_{GS}=2.5V, I_D=5.2A			38	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	V_{DS}=20V, V_{GS}=0V, f=1.0MHz		1035		pF
Output Capacitance	C_{OSS}			320		pF
Reverse Transfer Capacitance	C_{RSS}			150		pF
SWITCHING PARAMETERS						
Turn-ON Delay Time (Note)	$t_{D(ON)}$	V_{GS}=5V, V_{DS}=10V, R_D=10Ω, R_G=6Ω, I_D=1A		30		ns
Turn-ON Rise Time	t_R			70		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			40		ns
Turn-OFF Fall-Time	t_F			65		ns
Total Gate Charge(Note)	Q_G	V_{DS} =20V, V_{GS} =5V, I_D =6.0A		23		nC
Gate Source Charge	Q_{GS}			4.5		nC
Gate Drain Charge	Q_{GD}			7		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage (Note)	V_{SD}	I_S=1.7A, V_{GS}=0V			1.2	V
Diode Continuous Forward Current	I_S	V_D=V_G, V_S=1.3V			1.54	A

Note: Surface mounted on 1 in^2 copper pad of FR4 board; 208°C/W when mounted on min.

■ TYPICAL CHARACTERISTICS

